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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/635,431	08/10/2000	Takeshi Hoshida	1460.1007	6994

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EXAMINER

CUNNINGHAM, STEPHEN C

ART UNIT	PAPER NUMBER
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3663

DATE MAILED: 12/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/635,431

Applicant(s)

HOSHIDA ET AL.

Examiner

Stephen C. Cunningham

Art Unit

3663

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-36 and 42-45 is/are allowed.
- 6) ☒ Claim(s) 37-41 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All   b) ☐ Some \*   c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 37, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ma et al. in view of Berger et al.

Ma et al. teaches a method of light amplification comprising:

amplifying light in a longer wavelength band among a plurality of bands;

amplifying light in a shorter wavelength band among a plurality of bands.

See figure 4.

Ma et al. fails to teach to teach controlling means resulting in a greater average power in the shorter wavelength band than in the longer wavelength band. Berger teaches controlling means that determine a difference between the outputs of optical adjusting means for adjusting the optical power of shorter-wavelength-band light becomes larger than an output of adjusting means for adjusting optical power of longer-wavelength-band light (column 1, lines 49-56; column 2, line 4; and figure 1). It would have been obvious to modify the apparatus by controlling the wavelength bands of Ma et al. such that the shorter

wavelength band is greater than the longer wavelength band in order to compensate for Raman cross talk and gain flattening.

2. Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iwata in view of Ma et al.

With respect to claim 39, Iwata teaches a method of amplifying light comprising:

- generating a plurality of optical signals having different powers;
- multiplexing the optical signals;
- amplifying the WDM signal in the longer wavelength band;
- and controlling a gain of respective wavelength bands to have average power that is larger in the shorter wavelength band than in the longer wavelength band. See figure 1, and column 2, lines 30-40.

Iwata fails to teach amplifying WDM bands separately. Ma et al. teaches amplifying WDM bands separately. It would have been obvious to modify Iwata's method in to amplify WDM bands separately for the purpose of gain flattening.

3. Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iwata in view of Ma et al. as applied to claim 39 above, and further in view of Berger.

Determining a difference between outputs has not been taught. Berger teaches controlling means that determine a difference between the outputs of optical adjusting means for adjusting the optical power of shorter-wavelength-band light becomes larger than an output of adjusting means for adjusting optical power of longer-wavelength-band light (column 1, lines 49-56; column 2, line 4;

and figure 1). It would have been obvious to modify the apparatus by controlling the wavelength bands of Ma et al. such that the shorter wavelength band is greater than the longer wavelength band in order to compensate for Raman cross talk.

4. Claims 41 are rejected under 35 U.S.C. 103(a) as being obvious by Iwata et al. in view of Berger et al.

With respect to claim 41, Iwata teaches amplifying an average optical power of a WDM optical signal in a shorter-wavelength band; and amplifying a longer-wavelength band among a plurality of WDM optical signals (column 2, lines 30-34); and

inputting said plurality of WDM optical signals in the respective wavelength bands to an optical transmission line (figure 1).

Berger teaches controlling means that determine a difference between the outputs of optical adjusting means for adjusting the optical power of shorter-wavelength-band light becomes larger than an output of adjusting means for adjusting optical power of longer-wavelength-band light (column 1, lines 49-56; column 2, line 4; and figure 1). It would have been obvious to modify the apparatus by controlling the wavelength bands of Ma et al. such that the shorter wavelength band is greater than the longer wavelength band in order to compensate for Raman cross talk.

**Remarks**

The limitation "wherein approximate channel powers of the shorter wavelength band is greater than approximate channel powers of the longer wavelength band" fails to distinguish over the prior art because utilizing substantially linear preemphasis, as taught, a band of shorter wavelength will have a greater power than longer wavelength band.

***Allowable Subject Matter***

Claims 1-36 and 42-45 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: The nearest prior art is Berger et al. US 6,088,152 which teaches approximately linear pre-emphasis. Berger fails to teach bands each with plural channels where each channel in a given band is approximately equal and channels of differing bands vary such that channels of shorter wavelength bands have greater power than channels of longer bands.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

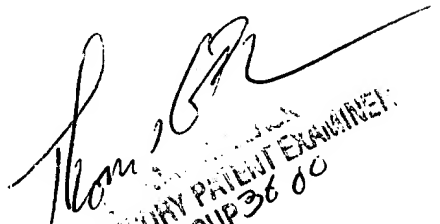
the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen C. Cunningham whose telephone number is 703-605-4275. The examiner can normally be reached on Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas G. Black can be reached on 703-305-8233. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and 703-872-9327 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

scc  
December 15, 2003

  
SUPERVISORY PATENT EXAMINER  
GROUP 36 00